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RETARDATION IN CINCINNATI PUBLIC  
ELEMENTARY SCHOOLS

BY HELEN S. TROUNSTINE

Founder and Late Director of the Juvenile Protective Association, Cincinnati

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CINCINNATI, U. S. A.

[1918]

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## SUMMARY

Cincinnati is taking the lead in several experiments looking toward a solution of the problem of retardation. (Pages 25-26.)

Three out of every five children in the public schools fail at least once before they leave school. One out of every five fails at least three times. In the fourth, fifth, sixth and seventh grades, more than half of the children are retarded. (Pages 5-7.)

The following conclusions are based on intensive study of 656 children who failed in ten Cincinnati schools in 1914-1915. (Page 8.)

More than half of these children were absent three weeks or more during the school year. The average absence of the children who failed was 25 days, compared with an average absence of 5 days on the part of children who passed. (Pages 8-10.)

Illness was said to be responsible for four-fifths of the absence, and home conditions for practically all the rest. (Page 11.)

Physical defects are at least three times as common among children who failed as among children who passed. (Pages 11-13.)

Two-thirds of the children who failed in these schools came from families with incomes too small to purchase the necessities of wholesome living. (Page 14.)

The majority of children who failed live in homes of three rooms or less. Not more than one child in four lives in a house with a bathtub. (Pages 17 and 33.)

The mother of one child out of every five who failed was gainfully employed. (Page 17.)

A lack of outdoor recreation is apparent among these children. (Pages 18 and 34.)

German or Italian is spoken in the homes of one-sixth of the children who failed. (Page 18.)

About one-fifth of the children who failed had changed schools during the year, and this may have contributed to failure in some cases. (Page 18.)

About one-eighth of the children who failed were feeble-minded, and another eighth, though not feeble-minded, were decidedly dull. (Page 19.)

Lack of enthusiasm and ambition, were important causes of failure. (Page 23.)

Boys failed somewhat more frequently than girls. (Page 23.)

Failures occur chiefly in abstract studies like grammar, history, arithmetic and geography, while concrete and practical studies like manual training and domestic science are more easily mastered. (Page 24.)

Different schools have very different standards as to what quality of work should be required for passing. The figures indicate the probability that in some schools twice as many children are failed as would be held back under similar conditions in other schools. (Page 26.)

#### RECOMMENDATIONS

An essential requirement for the solution of the problem of retardation is early diagnosis of the causes of failure in every case. It is urged that every school child who fails to pass a grade should be tested mentally, examined physically and his environment studied to ascertain whether the family income is sufficient to insure healthful surroundings. Such study would not only aid tremendously in dealing with individual cases, but it would make possible sound generalizations as to fundamental remedies for the evil of retardation. The splendid work of the Vocation Bureau points in this direction.

If the failure is due to absence, the causes for future absence should be eliminated. This would mean chiefly improvement of health conditions and adjustment of home situations which result in the detaining at home of school children. The health problem, if adequately met, would require the guaranteeing of certain minimum conditions as to housing, food, clothing and so forth. This would necessitate the insuring of a certain minimum income for these families.

Of the children who fail because they are mentally dull, quite a large proportion would unquestionably brighten up markedly if their families received enough income to rent a sunny, airy home, to purchase adequate food and to maintain a decent standard of living.

The guaranteeing of this minimum standard is, obviously, no easy task. Charitable agencies have thus far touched only the edges of the problem. The proposition is an absolutely feasible one, however, and will be mastered as soon as the public realizes the vital necessity for it.

The large remaining fraction of dull children whose deficient mentality would be found upon examination to be unalterable, because due to inherent defects, would require other treatment. For such children a special curriculum should be prepared looking toward fitting them for happy lives of physical labor, rather than for painful and fruitless struggles after mental achievement. Promising experiments in this direction are already being made in the Cincinnati Public Schools.

The seriousness of those failures which still persisted in spite of these measures, might be reduced by semi-annual instead of annual promotions, since a failure under that system would mean only one-half year's retardation.

Careful comparative study and discussion of the requirements for passing would help to increase the educational efficiency of the schools. Conferences should be arranged between principals of schools with large and with small percentages of failure, to work out a common basis of promotion.

Departmentalization, along the lines of the Gary plan or otherwise, would help, since it makes it possible for a pupil who is backward in one or two subjects but normal in others, to repeat only the subjects difficult for him, continuing without retardation in the other branches which he has mastered satisfactorily. A number of Cincinnati schools already have departmentalization in some of the upper grades.

Home visiting by teachers might also serve to increase the interest of parents and improve some of the adverse home conditions contributing to retardation.

The conclusions of the present study are based upon necessarily incomplete and in some cases fragmentary data. The essential recommendation must therefore be for further study. The ideal approach to this problem would be the study of all of the children of a representative school or district, including those who passed as well as those who failed. Complete data as to the environment, health, mentality, family income, absence, and aptitude of all these children would put the conclusions of this study to the test, would demonstrate conclusively those which are sound, and would indicate needed amendments in those based on insufficient data.

#### EXTENT OF RETARDATION

More than 40 out of every 100 children in the Cincinnati public schools are one year or more behind the grade they should have reached if they had passed one grade each year since entering school. Of school children at the age of 14 in June, 1915, nearly two-thirds were behind normal grade. The extent of retardation among this average group of children about to be released from compulsory education was approximately as follows:

TABLE 1

	Number	Per Cent of Total
In normal grade .....	1,290	35.8
One year retarded .....	825	22.9
Two years retarded .....	775	21.3
Three years retarded .....	465	12.9
Four years retarded .....	180	5.0
Five years retarded .....	55	1.5
Six years retarded .....	20	.6
Total.....	3,600	100.0

These data are based upon a table given in the Annual Report of Cincinnati Public Schools for 1915, on page 356. The amount of retardation shown above is larger than that immediately indicated by the table quoted, for the following reason: The report follows the method customary in such classifications and considers as of "normal age for the grade" all pupils who have reached the grade which they should have reached if they had entered school at the age of either six or seven and had progressed normally. About three-fourths<sup>1</sup> of the children enter, however, at the age of six. Many of these fail once, dropping back among those who entered at the age of seven. For this reason about 4,900 pupils referred to in the table in the school report as of "normal age," are actually one year retarded.<sup>2</sup>

The proportion of retarded children by grades is graphically shown by Graph I. The huge burden of backwardness which teachers and normal children have to carry appears from the black bulk in the several grades.

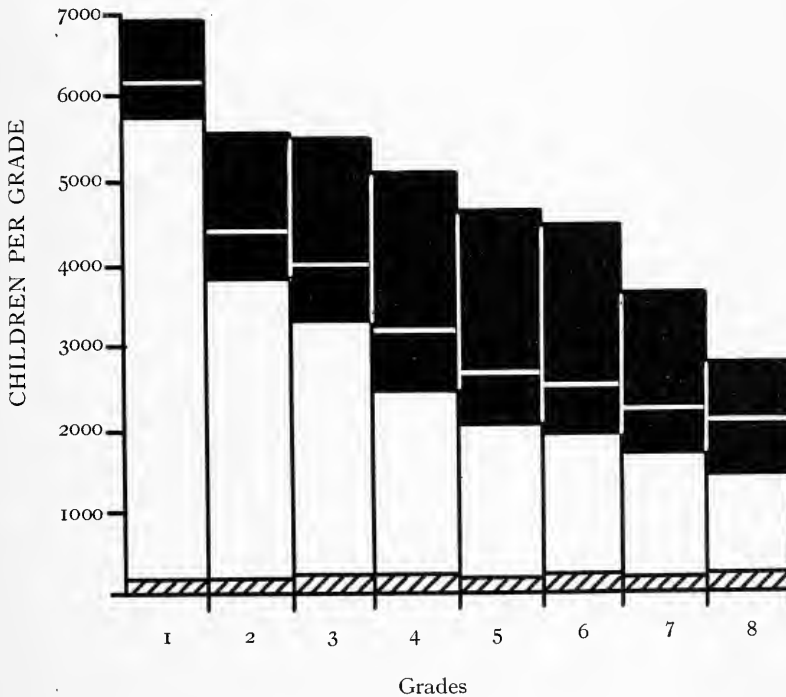
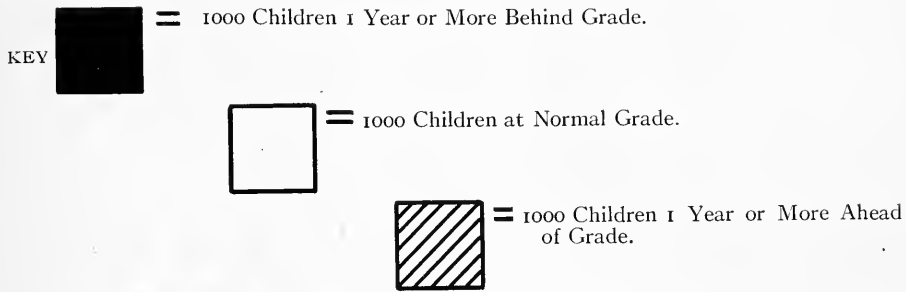
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<sup>1</sup>This estimate is subject to correction. It is based on the returns for the children who failed.

<sup>2</sup>Details as to the method of making this estimate will be found on page 28.



RETARDATION IN CINCINNATI PUBLIC SCHOOLS  
JUNE, 1915<sup>1</sup>



GRAPH I

Areas above white lines are those retarded on assumption used in the school report.

<sup>1</sup> Based on data in Annual Report, Cincinnati Public Schools, 86, 356, (1915)

## METHOD OF PRESENT STUDY

The startling conditions which these figures reveal in our schools (conditions which, deplorable as they are, are typical of those in nearly every large city in America) demand investigation. The Juvenile Protective Association, under the leadership of Miss Helen Trounstine, determined to study the social facts connected with retardation in Cincinnati schools, with a view to ascertaining the causes and suggesting remedies for an intolerable condition.

Ten schools<sup>1</sup> were selected for the investigation, and 656 pupils<sup>2</sup> who failed in June 1915, were intensively studied. The schools selected had a somewhat smaller percentage of failures than the average—12.0 per cent as compared with 13.2 per cent for the city at large. It appears that the schools draw their pupils from decidedly poorer families than the average, for the chief truancy officer (whose title has since been changed to director of attendance) reports<sup>3</sup> that free shoes were given to 80 out of every 1,000 children attending these schools, as compared with only 43 per 1,000 in the city as a whole, and free stockings to 160 out of each 1,000 children as compared with 86 per 1,000 in the city at large. For individual schools, these figures would not be a reliable index of poverty, but for the ten taken together they do suggest poor economic conditions.

For each of the 656 failed children who were studied a card similar to that shown on page 37 of the appendix, was filled out on the basis of school records, interviews with teachers and parents, visits to homes, physical measurements and special medical and mental examinations. The conclusions stated in this report have been based upon the data thus secured. The original tabulation of the material was done by Ida A. Broyles, director, since Helen Trounstine's death, of the Juvenile Protective Association, and by members of the staff of that organization.

## GENERAL ANALYSIS OF CAUSES OF FAILURE

Retardation in school is usually due to failure, or failures, to pass grades. Failures may possibly be due to one or more of three general causes: absence from school, inability to master the studies assigned, or lack of an earnest desire to succeed in school work. If a child is present regularly, is able to master his work, and eager to do so, failure is well-nigh impossible.

## ABSENCE AS A CAUSE OF FAILURE

The 656 children whose failures were made the subject of this study, were absent on the average 25 days during the school year of 1914-15. The average absence during that year of all children in the ten schools studied was 8 days.<sup>4</sup> Children in these schools who passed their grades were absent only about 5 days each. Clearly, therefore, since those who failed

<sup>1</sup>12th Dist., 30th Dist., Dyer, Garfield, Guilford, Oyler, Peaslee, Rothenberg, Webster, Windsor.

<sup>2</sup>The total number who failed at this time in these schools were 869, but only 656 could be located.

<sup>3</sup>Annual Report, Cincinnati Public Schools, 86, 195, (1915)

<sup>4</sup>Based on Annual Report, Cincinnati Public Schools, 86, 348, (1915)

averaged five times as much absence as those who passed, absence may have been an important factor in failures.

Some of the children who failed were present very regularly. The amount of absence is shown in table 2.

TABLE 2

Days Absent	Number of Children	Per Cent of Total
None	37	7.0
1- 9	153	29.1
10-19	92	17.5
20 and over	244	46.4
TOTAL	526	100.0

In addition to these, 59 children entered late, and most of these were absent considerably after their entrance. For the other 71 children the facts as to absence are not recorded.

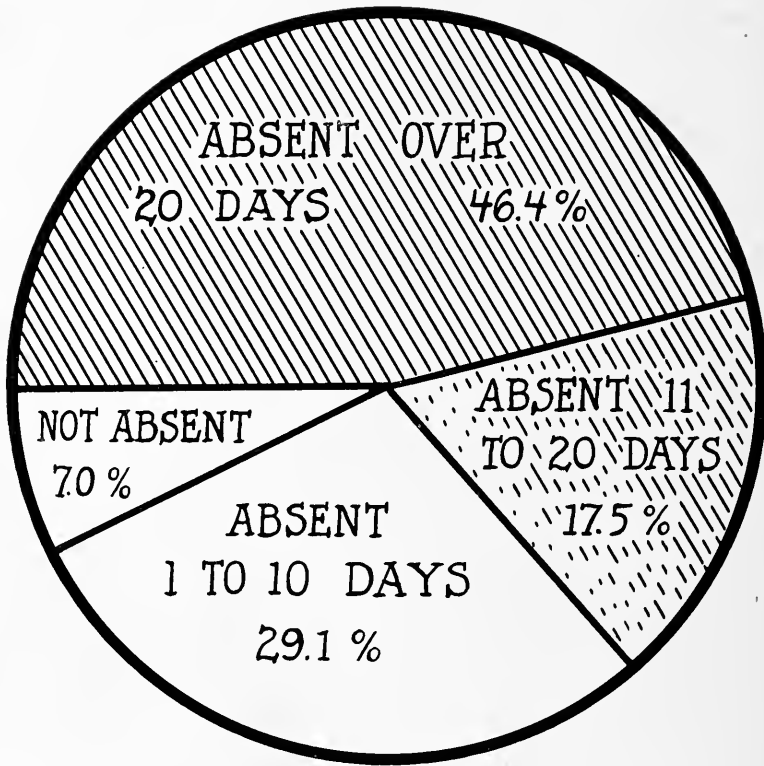
Failure is not likely to be due purely to an absence of less than ten days. Thirty-six per cent of the children who failed were absent less than eleven days, and hence their failures were probably due chiefly to other causes.

Absence of 20 days or over, on the other hand, would be certain to hamper a child's school work and would be likely to endanger promotion. Forty-six per cent of the children who failed were absent for such a period, and their failures may probably be charged in large part to their absence. The 18 per cent who were absent between 10 and 20 days may or may not have been seriously affected by such absence; probably it was at least a contributing factor. It seems safe to say that, in at least half of the cases of non-promotion, absence was one cause for the failure.

The influence of absence on failure is represented diagrammatically in Graph II.

It should be noted that the teachers, in their statement of causes for the failure of these children, assign absence as a reason in only 15 per cent of the cases. Parents also mention it in 15 per cent of the cases. This assignment of reasons was probably warped by the teachers' entire reliance upon their memories in assigning causes for failure. In reviewing the year's work of 40 to 60 children it would be natural to remember such positive factors as failure to grasp an explanation, and to forget such negative factors as the absence which may have been the cause of the failure to understand. Certainly, a child absent over 20 days during the school year would be expected to find it difficult to grasp subjects which had been explained in his absence to the other children.

## ABSENCE AS A CAUSE OF FAILURE



GRAPH II

Children who failed divided according to amount of absence during school year.

Four-fifths of the absences of the children studied were, according to the parents, due wholly or in part to sickness of the children absent. The detailed analysis is as follows:

TABLE 3

Reasons for Absence (As Given by Parents)	Number of Children Absent for Cause Given	Per Cent of Total Children
Illness.....	335	71.2
Illness and Home Conditions.....	40	8.5
Illness and Truancy.....	5	1.1
Illness and Change of School.....	4	.8
Illness and Weather.....	2	.4
Total Involving Illness.....	386	82.0
Home Conditions.....	59	12.5
Truancy.....	9	1.9
Changed Schools.....	8	1.7
Miscellaneous.....	9	1.9
Facts not Obtainable.....	471	100.0
Not Absent.....	139	
	47	
TOTAL.....	656	

The fact that this table is based upon the reasons given by parents for their children's absence probably means a minimization of causes such as truancy which would reflect unfavorably upon the child or the parents.

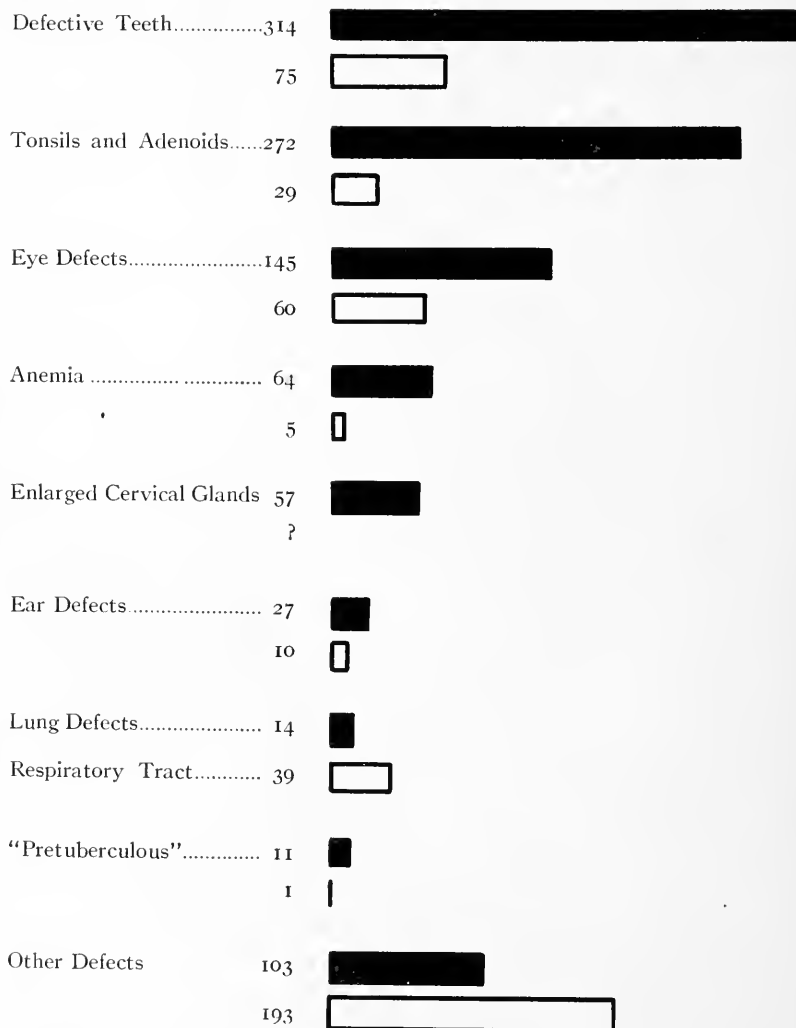
#### INABILITY TO MASTER STUDIES

Lack of ability to understand the studies assigned may be due to inherent mental inferiority (feeble-mindedness in its various degrees) or to a lack of adjustment of the studies to the child's aptitude; or it may be due to factors arising from unfavorable living conditions and their resulting physical defects. The latter of these elements is clearly related to sickness, as discussed in the preceding paragraphs.

The physical handicaps of this group are vividly shown by a comparison of the returns of the physical examination of those children who failed, with the returns of the physical examination of other school children. In the former group every child who could be reached was examined; in the latter group only those children were examined who had been absent for four days, or who were referred to the doctor because of apparent defects, or who came up in the course of the routine examinations of second and third grade children. One-fourth of all the children examined in the regular school routine were especially referred to the physician as defective; hence the proportion of defects in this group was unquestionably higher than in the general school membership. Furthermore, the obviously handicapped children who failed are presumed to have been previously examined and in most cases treated and cured. On the other hand it

should be remembered that the schools selected for the present study, were not up to the normal average in the economic status of their pupils.

PHYSICAL DEFECTS PER THOUSAND  
CHILDREN WHO FAILED ████████ COMPARED WITH  
GENERAL RUN OF CHILDREN EXAMINED



GRAPH III

TABLE 4  
PHYSICAL DEFECTS PER 1,000 CHILDREN EXAMINED

Type of Defect	Children Who Failed	Children Examined in Course of School Routine <sup>1</sup>	Ratio of Defects Among Children Who Failed to Those in General Group
Defective teeth.....	314	75	417 : 100
Tonsils and adenoids.....	272	29	939 : 100
Eye defects.....	145	60	242 : 100
Anemia.....	64	5	1280 : 100
Enlarged Cervical Glands.....	57	?	?
Ear defects.....	27	10	270 : 100
Lung defects, (respiratory tract).....	14	39	28 : 100
"Pretuberculous".....	11	1	1100 : 100
Other defects.....	103	193	53 : 100
Total defects.....	1007	412	214 : 100

If children who failed had been excluded from the general group, the ratio at the end of the last column of Table 4 would have been about 330 : 100.

In spite of the fact that the general group of children examined in course of school routine contains an abnormally large number of physical defectives, the proportion of defects per 1,000 children examined is less than half as large in this general group as among the children who failed. Anemia and pretuberculous conditions are more than ten times as frequent among the latter. Infected tonsils and adenoids have nearly ten times the normal frequency, while defective teeth, eyes and ears are from two to five times as frequent as the usual rate. Clearly, such physical handicaps as underfeeding and defective sight, hearing and breathing may be important causes of backwardness in learning.

Physical defects lead back to home conditions. The striking prominence of anemia and underfeeding suggest poverty as a cause.

This conclusion needs careful consideration when it is pointed out that measurement of these children indicated that they were practically normal in height and weight for their ages, judged by the standard of the accepted norms for school children. Details as to these measurements are given in the appendix (page 36).

#### POVERTY AS A CAUSE FOR RETARDATION

Illness and "home conditions" together were given as the causes of 92 per cent of the absences. "Home conditions" mean illness of other members, the need of help by the mother, or, in motherless families, by the other children, and so forth. Physical defects were extremely prevalent among the children who failed. Both illness and physical defects have poverty as one of their leading causes. One instance in proof of this state-

<sup>1</sup> Annual Report Cincinnati Public Schools, 86, 304 (1915)

ment is the fact that a sickness census of Milwaukee, conducted in 1916, by the City Club of that city, found serious illness three times as frequent among the poor as among the well-to-do. The studies of infant mortality conducted by the Federal Children's Bureau found poverty as a leading cause of baby deaths. A study of tuberculosis in Cincinnati, conducted by the United States Public Health Service, pointed out the importance of poverty as a cause of this disease. This demonstrated connection between poverty and sickness suggests that poverty may result in absence and physical defects, and hence in failures in school. The importance of this hypothesis justifies a further discussion of the point.

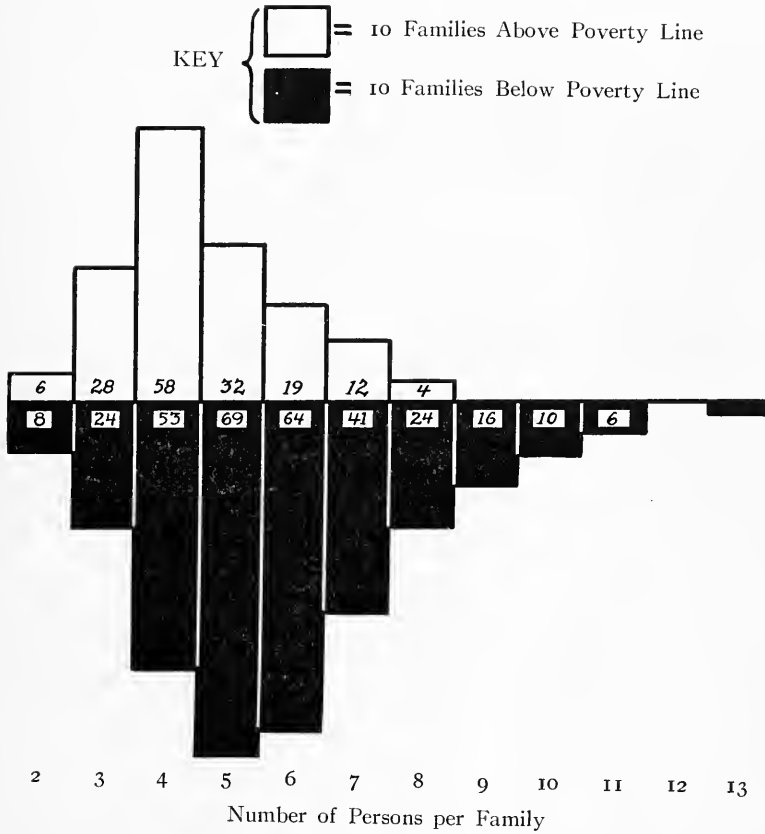
The weekly family incomes of 450 of the families studied were ascertained. In order to measure the extent of poverty among these families, it is necessary to determine the amount upon which a family of a given size could maintain a minimum decent standard of living in 1914-1915. No such data are available for Cincinnati, but a careful study of this question which was made for Milwaukee has been corrected to allow for the difference in living costs between the two cities. The standard is a meager one, allowing for no extravagance, and not even permitting the renting of a house containing a bathtub. Table 5 shows, for the children who failed, the number of families who were below the poverty line on this basis:

TABLE 5

Size of Family	Weekly Cost of Living Per Family (1914)	Number of Families		
		Below Poverty Line	Above Poverty Line	Total
2	\$11.00	8	6	14
3	12.30	24	28	52
4	14.00	53	58	111
5	16.00	69	32	101
6	18.00	64	19	83
7	20.40	41	12	53
8	22.75	24	4	28
9	25.15	16	....	16
10	27.50	10	....	10
11	.....	6	....	6
12	.....	....	....	....
13	.....	2	....	2
All sizes		317	159	476
Per cent		66.6	33.4	100



POVERTY OF FAMILIES OF CHILDREN WHO FAILED,  
CLASSIFIED ACCORDING TO SIZE



GRAPH IV

The gross inadequacy of these family incomes is further indicated by a comparison with the incomes of 414 families having working children as reported by Helen T. Woolley,<sup>1</sup> Director of the Vocation Bureau in the Cincinnati Schools as shown in Table 6.

TABLE 6  
MEDIAN PER CAPITA INCOMES

Size of Family	Families with Working Children	Families of Children Who Failed	Difference
2	\$5.50	\$4.50	\$1.00
3	5.20	4.18	1.02
4	5.25	3.56	1.69
5	4.38	2.76	1.62
6	3.77	2.43	1.34
7	3.14	2.09	1.05
8	3.53	1.81	1.72
9	2.50	2.06	.44
10	1.96	1.65	.31
11	2.25	1.36	.89
Average	\$3.75	\$2.64	\$1.11

The families whose children failed, had, according to this comparison, about 30 per cent less income per capita than these certainly not wealthy families who had taken their children out of school to put them to work.

In order to measure accurately the effect of poverty in producing absence we should have data as to the amount of absence among all poor children in these schools (including those who passed) and comparative figures as to the amount of absence among all children living above the poverty line in these schools (including those who passed). Unfortunately, data are at present available as to family incomes only among the children who failed.

If we could assume that not more than one-third of the families of all the children in the ten schools studied had incomes too small to maintain a decent standard of living, we might estimate quite accurately from the data at hand the relative amount of absence among the poor and the well-to-do. Under the assumption named, absence would be proved to be twice as prevalent among the poor as among the fairly well-to-do. By the same process it would appear that physical defects were from two to three times as frequent among children below the poverty line as among those above it.

Such conclusions would correspond with what might be expected from other indications contained in these data.

The tenfold excess of anemia among those who failed (chiefly poor children) points toward insufficient and improper food and housing as a link between inadequate incomes and disease.

<sup>1</sup> In the Annual Report Cincinnati Public Schools 86, 181 (1915)

The poor are unable to pay sufficient rent to secure decent dwellings. Of the families studied, 45 per cent paid less than \$10 rent per month, and 75 per cent paid less than \$15. This means overcrowding and inadequate sanitary arrangements. Very few, if any, houses with baths rent for less than \$15; hence not more than one family in four of the group studied has a bathtub. Overcrowding is an inevitable result of insufficient rent. Four-fifths of all the families live in four rooms or less, while 62 per cent live in three rooms or less. Of the families living in two or three rooms, more than half have five or more members. These facts give a somewhat ironic twist to the statement made by 89 per cent of the parents that their children have an opportunity for quiet study at home. Imagine "quiet study" in a two room house inhabited by five, six, seven or more people. Yet 104 such homes were reported, out of 638 from whom data were secured.

The excess of physical defects among these children may be due in considerable part to inability of the parents to pay for the services of dentists, oculists and other specialists, and their unwillingness to accept charitable medical aid.

Logical as seems the conclusion that poverty is closely related to sickness, absence, physical defects and failure, it must be remembered that the data herein quoted are not conclusive in this respect, because no data were collected as to family incomes of children who passed, and the schools studied include probably a disproportionate number of schools located in those parts of the river valley section of the city where the worst poverty is found. In the absence of complete data, however, the only way to settle the question of the extent of poverty among school children and its effect on retardation would be to make a more thorough investigation of the subject.

#### OTHER BEARINGS OF POVERTY

Whether or not poverty results in sickness which causes absence and in physical defects which hamper the child fatally in his studies, it does involve other elements which tend toward failure in school.

A frequent concomitant of poverty is fatherlessness. Of the 648 children giving information 89, or 14.7 per cent, had widowed mothers.

For Cincinnati as a whole, it is estimated<sup>1</sup> that 9 per cent of families having parents between the ages of 25 and 44 years have widowed mothers. On this basis, the percentage of widowhood is a third higher among the families of children who failed than among average families. The proportion of families without mothers is 4.6 per cent as compared to the 3.0 per cent average for the entire city.

Even more striking is the proportion of mothers at work. Out of 632 families giving information, 142 had mothers at work, or 22 per cent. The normal percentage of married women gainfully occupied, in the United

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<sup>1</sup> Thirteenth Census of the United States, 111, 400, (1910)

States according to census reports<sup>1</sup> is 5 or 6 per cent. Employed widows would bring the total of gainfully occupied mothers to 12 or 15 per cent. A study of poor families made by the Immigration Commission<sup>2</sup> in 1909 in eight typical cities showed less than 18 per cent of the mothers as contributing to the family income. The fact that this group of families shows decidedly more than the proportion of working mothers found even in the abnormal group of families studied in that report is not only a striking additional evidence of the poverty of these families but is an indication of probable lack of adequate home training of these children.

All of the above factors would probably be much less prominent as causes of failure in schools where better economic conditions prevailed.

#### OTHER HOME CONDITIONS

These might also be factors in decreasing the brightness of the child. Loss of sleep does not seem to have been such a factor, if the returns are trustworthy. Early bedtimes are reported as the rule. The majority of first and second grade children who failed went to bed at or before 8, while 96 per cent were in bed by nine. Third and fourth graders stayed up a little later, but 95 per cent of them retired at or before nine. Even of the fifth to eighth graders 76 per cent were in bed by nine and 97 per cent by ten.

Nor was the sleeping time cut short by unseemly early rising. Two-thirds of the children rose after seven, while only 6.5 per cent rose before 5:30. Nine hours or more of sleep were thus assured to the great majority of the children.

A lack of outdoor recreation seems apparent. Only one-third of the children are recorded as having habitual open-air recreation. Less than one-sixth record parks and playgrounds as places of amusement. Strikingly, nearly half of the children for whom recreation was recorded mentioned home play as their form of pleasure. Moving pictures cannot, it seems, be blamed for failures at school. Only one child out of twenty mentioned the movies as a form of recreation.

Employment outside of school is not an important factor in failures if parents' reports were frank. Only one-sixth of the children were reported as so employed. The great majority of these carried papers, or were helping at home.

The use of a foreign language exclusively at home would handicap children severely. English was not spoken at all in the homes of 9.4 per cent of the children, and was spoken with other languages in 7.0 per cent of the homes. German was used in more than half of the homes where no English was spoken, and Italian in nearly one-third.

Change from one school to another may have contributed to failures, though the data are not conclusive. Of the children who failed for whom the facts are reported, 22 per cent had such a change during the year. In

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<sup>1</sup> Twelfth Census of the United States: Occupations, page CCXIII (1900)

<sup>2</sup> Report of the Immigration Commission of 1909: *Immigrants in Cities*, I, 139, (1911)

these ten schools the number of children enrolled<sup>1</sup> during the year was 25 per cent larger than the number remaining at the end of the year. This would suggest that the amount of transfer from school to school among the children who failed was not abnormal.

Thus far in the consideration of stupidity as a cause of failure, environmental factors only have been considered. The hereditary element remains to be dealt with.

#### FEEBLE-MINDEDNESS AS A CAUSE FOR FAILURE

To ascertain the extent of feeble-mindedness among the children who failed, tests<sup>2</sup> were made by Helen T. Woolley, Director of the Vocation Bureau of the Cincinnati Schools, upon those under 11 years of age who had failed twice or oftener, and upon those of 11 years or over who had failed three times or more. One hundred and sixty-nine such children were recorded in the study. Of these, only 79 could be located at the time the mental tests were made. The results of the psychological examinations were as follows:

TABLE 7

	Number	Per Cent
Normal minds.....	12	15
Inferior (not feeble-minded).....	32	41
Borderline.....	13	16
Defective.....	22	28
Examined.....	79	100
Not Located.....	90	
Total.....	169	

A definite inherent defect of mind may probably be assigned to children in the borderline group, and certainly to the defectives.

#### WHAT OF THE CHILDREN NOT TESTED?

It seems fair to assume that the 90 other children who had failed as often as the group studied, but who could not be located for mental examination, were as much retarded as the group which was studied. This would mean that, out of all of the children who failed, 47 or 7.2 per cent, were defective, and 28, or 4.3 per cent, borderline—a total of 11.5 per cent with probably inherent mental defects.

In addition to these, however, many of the young children who failed for the first time in 1915, unquestionably were feeble-minded, although not sufficiently retarded to be examined in this group. It is estimated<sup>3</sup> from the age groupings of Cincinnati public school children in 1915, that 2,300 of the 14 year olds had failed at least once. Of these, 700, or 30.4 per

<sup>1</sup> Annual Report, Cincinnati Public Schools, 85, opposite page 348 (1915)

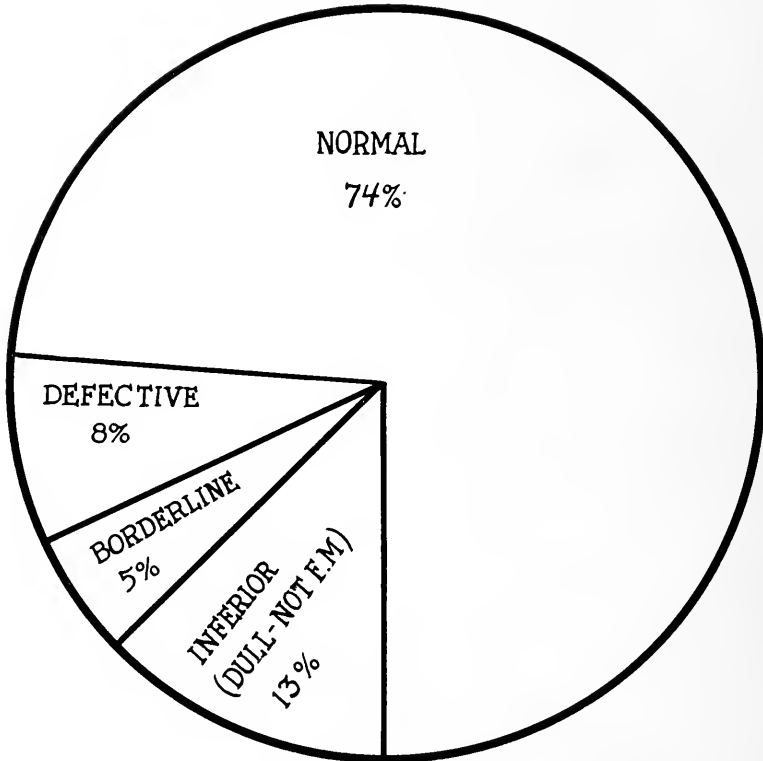
<sup>2</sup> Details as to the methods of these tests will be found on pages 38 ff. of this study.

<sup>3</sup> On page 5 of this study.

cent, had failed three times or more, and hence would be properly comparable to the group whose mentality was studied by Helen T. Woolley. If 44 per cent of these were defectives or borderline cases, as was true in the group tested, it would mean that between 8.5 and 13.5 per cent of all of the children who fail at all in these schools are definitely feeble-minded, while 12.6 per cent more, though not feeble-minded, have "inferior" minds, giving a total of 26 per cent of the retarded children who would be classed as mentally below par. This figure is, of course, only an estimate based on a rather small number of instances, and must be considered as merely approximate.

The importance of mental dullness in causing retardation is indicated diagrammatically in Graph v.

APPROXIMATE DISTRIBUTION ACCORDING TO MENTALITY  
OF CHILDREN WHO FAILED

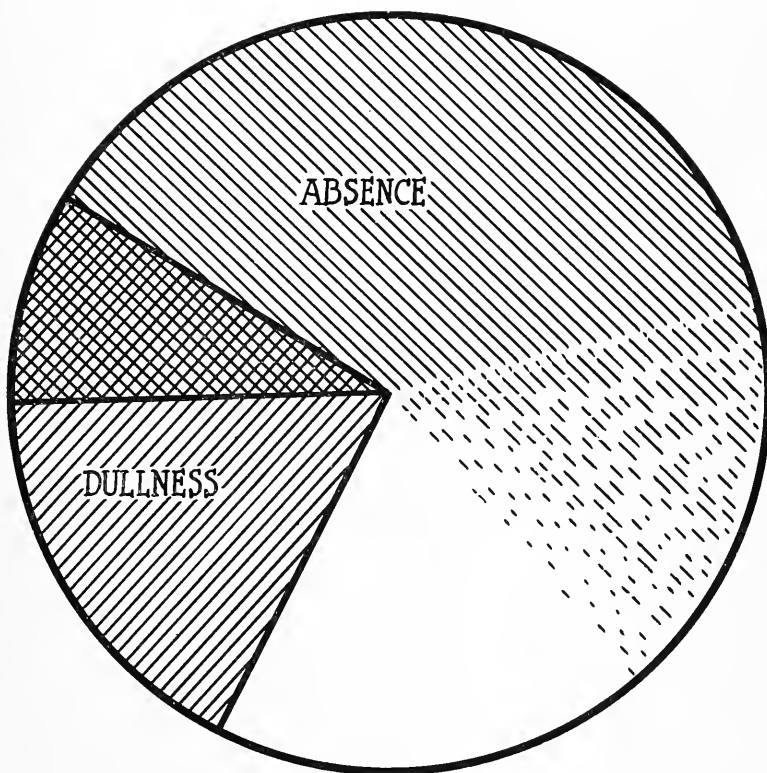


GRAPH V

By comparison, it should be noted that teachers mention "mental" causes as being a factor in 30 per cent of the failures, while parents mention it as a cause in only 15 per cent of the cases.

Mental dullness and absence overlap as causes of failure. Of those classed as mentally deficient, 36 per cent were absent 20 days or more. This should be compared with the 50 per cent of normally bright children who failed who were absent for 20 days or more. The average amount of absence of the mentally deficient was 21 days, while the average for normal children who failed (excluding these dull children) was about 28 days. This is due to the fact that normal children are less likely to fail than dull children, and that when bright children do fail, absence or some other cause is likely to be involved.

OVERLAP OF ABSENCE AND DULLNESS AS CAUSES OF FAILURE



GRAPH VI

The cross-hatched sector represents the 9 per cent. of the children who failed who were both dull and absent over 20 days, and whose failure may therefore have been due to either or both of these causes.

The connection between feeble-mindedness and poverty is worth investigating. Of the 54 children found to be "inferior," "borderline" or "defective," whose family incomes are known, 37, or 68.5 per cent, were

below the poverty line. Of the 18 "defective" whose incomes were known, 12, or 67 per cent, were poor. If we assume that all feeble-minded children become retarded, and if we assume that not over half of all families of children in these schools were poor, the returns indicate that the proportion of mentally deficient children was twice as great among the families with insufficient incomes as among other families.

The data are too meager to be conclusive on this point. If the hypothesis that feeble-mindedness and poverty, among retarded children, are correlated, is accepted, it raises a fundamental point. If feeble-mindedness is hereditary, as it probably is in a large proportion of cases, it would not seem safe to assume that it is chiefly a direct result of poverty. The hereditary nature of feeble-mindedness makes it quite probable that the feeble-minded children had parents of low mentality. Stupid men earn low wages and stupid women spend money unwisely. Hence it seems likely that feeble-mindedness is more a cause of poverty than a result of it.

This conclusion would give color to a theory that a large proportion of these children who fail may be of decadent stock which may be defective mentally and physically, weak in resistance to disease, incompetent economically and generally deficient. A striking fact in this connection is that 35 per cent of the families of the children who failed were treated during the year September, 1914 to September, 1915, by the Social Agencies reporting to the confidential exchange of the Council of Social Agencies.<sup>1</sup>

This old problem of which of two correlated conditions is cause and which is effect cannot be settled finally in this case. If the degeneracy theory should hold good here, however, it could not excuse the present situation. Even among the mentally defective, overcrowded housing, deficient food and insufficient medical care certainly augment any natural tendency toward disease. Moreover, the feeble-minded form only a small minority of the children who fail.

The two factors of absence and mental dullness, even when their overlapping is allowed for, account for at least 65 per cent of the failures. Other factors must be sought to explain the remaining 35 per cent.

The causes for inability to master studies, other than mental deficiency, are more difficult to measure. Physical defects appear to be by far the most important. Of the 439 children examined, 257, or 58.5 per cent, had recorded physical defects. Many of these physically defective children were, however, among those whose failure has already been ascribed to absence or mental dullness. When these are omitted, less than 20 per cent of the whole number of children who failed remain who could have been held back solely because of physical defects. No means of measuring the importance of such defects in causing failure is however available. Teachers refer to physical reasons as contributing to 17 per cent of failures; parents ascribe them as causes in 26 per cent of the cases. These estimates, however, are not based on any scientific study of individual children.

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<sup>1</sup> For details see page 33 of this study.



The complication of causes for failure thus far discussed may be summarized as follows:

*Of every 100 children who failed*, as covered in this study, approximately 50 were absent for a total of over three weeks each. Of these, 9 were mentally dull, and about 30 had physical defects.

In addition to the above, 17 were mentally dull but were absent less than three weeks. Of these 10 or 11 had physical defects.

In addition to the above, about 20 had physical defects, but were not absent for three weeks nor mentally dull.

Further complicating factors, less susceptible to accurate measurement, were absence of the mother at work, death of the father or mother, lack of outdoor recreation and use of a foreign language at home.

These factors all affect failure either through absence of the child from his studies, or through inability to master them. Even if a child were present constantly, however, and were quite normal in intelligence, he might fail because of lack of interest in his work, or because of a perverse disposition.

How far was the children's own lack of eagerness to learn an important cause of failure? The reports as to which studies the children were poor in (taken from interviews with the parents) show less than one-fifth of the children as being poor in effort and a still smaller proportion poor in conduct, while more than half are reported as poor in other subjects.

The teachers, who might be expected to remember troublesome children, estimate conduct as a factor in about 2 per cent of the failures, truancy 0.7 per cent and disposition and habits 9.2 per cent. Faulty attitude toward the school is blamed by the teachers as a cause in nearly one-sixth of the failures, but this difficulty, like failure to master studies, is as likely to be the fault of the school as of the child, and will be discussed in the next section.

A serious fact is that one-third of the children for whom the question is answered are reported as not ambitious. Four-fifths of the parents are reported as ambitious for the children.

Lack of enthusiasm on the part of the child must therefore be entered as a significant cause of failure, though wilful misbehavior is rarer than might be expected.

It is probably because of a greater lack of interest in school work that failure was about one-fifth more prevalent among boys than among girls in the ten schools studied.

#### LACK OF ADJUSTMENT OF STUDIES

The ability of a scholar to master his studies may be represented as the ratio between the mental capacity of the child, and the suitability of the studies to his intelligence. A precocious child of eight would fail in college algebra, while an imbecile of 15 would fail in a first grade reading lesson. In the latter case the child's dullness would be at fault; in the former the selection of studies would be to blame.

Failure of a child to master a given curriculum is therefore a two-sided situation with the fault lying on both sides.

The record of the studies in which the children failed shows their relative ability to learn to perform concrete, manual tasks and their inability to master abstract matters. The subjects in the order of success were as follows:

TABLE 8

Subject	Per cent of children in this group, recorded as taking subject, who were poor in it <sup>1</sup>
Household arts.....	5.3
Industrial arts.....	18.1
Conduct.....	17.3
Effort.....	18.6
Writing.....	36.6
Spelling.....	41.4
Reading.....	47.8
German.....	45.0
History.....	71.8
Language and composition.....	74.8
Arithmetic.....	77.6
Geography.....	75.3

Clearly, subjects requiring manual dexterity and bearing obvious service to the child are quite readily mastered. Household arts appeal to nearly every girl as of immediate practical value, involve manual dexterity and deal with tangible objects. Hence mastery here is well-nigh universal among these children. Industrial arts involve manual dexterity and deal with tangible objects, but are of less immediate practical use to boys than cooking and sewing are to girls. Writing is a purely manual problem but the practical value of beautiful script is less obvious to the child than that of good biscuits. Besides, the appeal to the constructive instinct is lacking.

Spelling is purely a matter of memorization, without the appeal of manual construction but without the difficulty of abstract reasoning. Reading has a practical appeal but begins to call in higher reasoning centers. History and geography, because of their removal from daily values and their requirements for thought, come high in the scale of difficulty. Grammar is a complex abstraction, and composition is one of the really difficult arts, of little practical appeal to a child of laboring outlook. Arithmetic, in spite of the admirable efforts of Cincinnati school authorities to make it concrete, is a highly abstract science. Public schools attempt to teach feeble-minded children the meaning of "aliquot numbers," whose very definition the principal of one of Cincinnati's best schools was unable to give without looking it up.

The listlessness and lack of ambition which have been mentioned as a serious cause of failures in school are due in part to the fact that school

<sup>1</sup> These percentages are not based on official reports, but are recollections and impressions of parents and teachers.

work is not interesting. Now "interest" comes directly from the Latin and means "It concerns." Studies are uninteresting because they have no vital connection with the real life and needs of the children. Psychological experiments have proved that resources of energy are released when interest is aroused. Interest can be gained by connecting the school work directly with the child's own aptitudes, environment and future development.

Dropping for a moment the unreasoning assumption that in a democracy every child should be prepared for college, what are the practical needs of a boy or girl whose mental calibre fits him only for unskilled or semi-skilled labor? He needs, first, training in the use of his body in the rougher practical crafts. This the record seems to show him capable of. Second, he needs enough knowledge of reading, writing, spelling and grammar to enable him to read and understand a newspaper and to write a legible and intelligible letter occasionally. Of arithmetic he needs only enough to count money correctly, to add simple columns, and to solve rudimentary problems of measurement.

For the sake of his fellow citizens he needs to understand in rough outline the ideals of the American Government, the practical ways in which it touches his life, and how to exercise the ballot. For his own sake, he needs to understand as much of the practical life of industry and of the meaning of the fine arts as he can.

If the traditions of the past were swept aside, and a curriculum made up for this group of children with these definite needs in mind, failures due to dullness could be practically eliminated.

On the other hand, children of keen minds, who are fitted to become engineers, chemists, editors, or lawyers need quite a different elementary training. They must learn to master abstract conceptions in mathematics, language and philosophy. Even those children whose mental equipment is such as to fit them for bookkeeping, salesmanship and skilled crafts of various sorts, need to be able to grasp more complicated ideas than those who are destined to be the unskilled workers of the world.

Any attempt, therefore, to simplify the abstract studies for all children to such a degree that the dullards can grasp it, involves a serious injustice to the intelligent children who need the severer discipline. The method of having all of the work alike for practically all of the children, and then requiring those who do not grasp the teaching in one year to repeat it a second time, is certainly a bungling expedient.

What is needed is a prompt classification of children according to their innate mental capacities, and an adjustment of the studies to fit the needs of their various grades of intelligence in the light of the future stations in life to which their abilities destine them.

Cincinnati schools are already making some notable experiments looking toward some such intelligent adjustment of education to actual needs. The Vocation Bureau is now working at the task of making such adjust-

ments on the basis of mental tests. The "Opportunity School" is an actual application on a limited scale of the principle of special treatment for retarded children. Three "rapidly moving" classes are now in operation for brilliant children. The development of industrial arts and its extension into the lower grades is a preliminary step in this direction. Classes in sewing, dressmaking, power-machine operating, garment making, basketry, weaving, millinery and embroidery have organized in an attempt to meet the needs of average and retarded pupils. The "observation classes" in the Peaslee School are an experiment in the same direction. Distinctively industrial classes for retarded children are in operation. The classes in the Bloom School, for children who have finished the grades before the legal minimum working age but who cannot go on to high school are suggestive of possible adjustment of curricula to special needs. Thus Cincinnati has made a start toward remedying conditions which many other cities are ignoring in their own schools.

#### STANDARDS OF PROMOTION

The importance of absence as a cause of failure would lead one to suppose that the schools having the largest percentages of absence would tend to have the largest percentages of failures, and that the schools with the smallest percentages of absence would tend to have the smallest percentages of failures. No such connection exists among the fifty-nine elementary schools of the city. It is true that the school having the largest percentage of absence (10.1 per cent) has also the largest percentage of failure (31.40 per cent). But here the correlation ends. The other four schools with the largest percentages of absence have percentages of failure very close to the average. The six schools with the least absence include the school which has the fourth largest percentage of failure in the city. Of the seven schools with the largest proportion of failures, all except one have less than the average amount of absence, and the schools with the least failures have a normal average of absence.

These apparently paradoxical facts suggest the hypothesis that the standards of promotion vary radically from school to school. Naturally, in any school, the children who are most absent and least intelligent would be the first to fail. In some schools, however, the lines are apparently drawn very rigidly, while in others a generous laxity obtains, so that a child who would easily pass in one school is repeatedly held back under the more severe standards of another. Without some such hypothesis it is impossible to understand how, in one group of six Cincinnati schools, one child out of every five failed in 1914-15, while in one other school only one in 27 failed, and in a group of eight schools, only from one pupil in 15 to one in 11 failed. Thus, in the former group of schools, about 20 per cent of the pupils failed, while in the latter group the percentage was only about 8.

The radical variability in standards of promotion which these figures indicate is a serious misfortune for the children. Those who are held

back because of unduly rigid standards are certainly injured in their ambition, their interest and their acquaintance with higher departments of learning. Those who pass because of lax standards are being hurried through a course of badly digested, ill-comprehended material which will leave them ill-fitted for life.

## STATISTICAL APPENDIX

TABLE 9

EXTENT OF NON-PROMOTION IN CINCINNATI PUBLIC GRADE SCHOOLS IN  
1914 AND 1915

Grade	Number of Pupils <sup>1</sup> in 1915	Number not <sup>1</sup> Promoted 1915	Percent not Promoted 1915	Percent not <sup>2</sup> Promoted 1914
Kindergarten	2,522	157	6%	
1st	5,786	1,214	21%	21%
2nd	4,984	644	13%	12%
3rd	4,893	705	14%	14%
4th	4,612	554	12%	13%
5th	4,349	528	12%	13%
6th	3,931	427	11%	12%
7th	3,157	358	11%	12%
8th	2,425	217	9%	9%
All Grades	36,659	4,804	13%	13%

TABLE 10

AGE DISTRIBUTION BY GRADES IN JUNE, 1915 OF CHILDREN WHO FAILED  
TO PASS AT THAT TIME IN THE TEN SCHOOLS STUDIED

Grade	Age											All Ages
	6	7	8	9	10	11	12	13	14	15	16	
1st.....	69	77	27	5	1	....	....	....	....	....	....	179
2nd.....	....	7	48	26	10	....	2	....	1	....	....	94
3rd.....	....	....	14	34	27	14	2	1	1	....	....	93
4th.....	....	....	....	2	11	14	19	6	4	2	....	58
5th.....	....	....	....	....	3	16	8	13	18	9	1	68
6th.....	....	....	....	....	....	5	10	16	20	18	5	74
7th.....	....	....	....	....	....	....	3	16	23	16	6	64
8th.....	....	....	....	....	....	....	....	4	10	10	2	26
All Grades.....	69	84	89	67	52	49	44	56	77	55	14	656

<sup>1</sup> Annual Report Cincinnati Public Schools, 86, opp. 348, Table VI1 (1915)

<sup>2</sup> Annual Report Cincinnati Public Schools, 85, 345 (1914)

## METHOD OF ESTIMATING TRUE EXTENT OF RETARDATION

The Cincinnati school report for 1914-15 shows<sup>1</sup> that 4,019 children born in 1908, were in the first grade in June, 1915, and that 2,025 children born in 1907, were also in the first grade at the same time. Both of these groups are stated, in accordance with the generally accepted practice, as being "of normal age for the grade." However, the group of 2,025 children born in 1907, must include the children born in that year who entered first grade in 1913, at the age of six, and failed. The school report for 1913-14, shows<sup>2</sup> that 3,783 children in 1908 were in the first grade in June, 1914. Only 2,539 children born in 1908, appear as being in the second grade in June, 1915. What became of the other 1,244 children? Some of them may have gone to private or parochial schools for the second grade. Part of them, however, certainly failed. About 21 per cent of all first grade children failed in 1914.<sup>3</sup> Twenty-one per cent of 3,783 is 795. If this many of the first graders born in 1907, failed in June, 1914, nearly 800 of the supposedly normal aged children in the first grade in 1914-15 were in reality one year retarded.

The objection raised against this method of estimating retardation is that the first grade is not normal; that children are simply held there until they can be properly classified; and that apparent failure there is not significant. This viewpoint gains support from the fact that, in Cincinnati schools, 20 to 25 per cent of the first grade pupils are not promoted, while only 12 to 15 per cent of second grade pupils are held back. Suppose that we assume that in June, 1914, the percentage of true failures among the six-year-olds in the first grade was only 10 per cent instead of the 21 per cent assumed above. In this case, only 378 of the 2,025 first graders born in 1907, were really retarded. This would leave 1,647 children who were born in 1907, and who were normally completing the first grade in June, 1915, as compared with 4,019 born in 1908. Of this 4,019, however, probably 10 per cent will be of the type referred to above, held back for classification purposes but not truly retarded. The ratio of true six-year-old entries to seven-year-olds would thus be 3,617 : 1,647. Now it seems reasonable to assume that about the same proportion of the former as of the latter pupils will fail, so that the ratio of normally advanced six year entries to normally advanced seven-year entries will continue to be the same. We can ascertain from the age-grade classification in 1915 the number of normally advanced children who entered at the approximate age of six. Hence we can determine the number normally advanced who entered at seven, and by subtraction ascertain how many of those given as "of normal age for the grade" had actually failed once. This process is embodied in the following table:

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<sup>1</sup> Annual Report Cincinnati Public Schools 86, 356 (1915)

<sup>2</sup> Annual Report Cincinnati Public Schools, 85, 356 (1914)

<sup>3</sup> Annual Report Cincinnati Public Schools, 85, 345 (1914)

TABLE 11  
ESTIMATE OF TRUE RETARDATION IN JUNE, 1915

Grade	Entered at approximate age of six	Children one year older in same grade	Estimated number normally advanced of latter group	Retarded Children		
				Entered at six years and failed once	On basis used in report	Total
1	2	3	4	5	6	7
1	3617	2025	1647	378	737	1115
2	2539	1767	1156	611	1093	1704
3	2098	1648	955	693	1554	2247
4	1572	1476	717	759	1871	2630
5	1319	1204	600	604	1956	2560
6	1210	1182	551	631	1895	2526
7	1022	1024	466	558	1392	1950
8	823	1039	375	664	778	1442
Total	14,200	11,365	6,467	4,898	11,276	16,174

Column 2 contains children in first grade born in 1908, (minus 10 per cent), in second grade born in 1907, in the third grade born in 1906, etc. Column 3 contains children in the same grades born one year later than those in Column 2. Column 4 contains the number of actually normally advanced children among those of Column 3, estimated as explained above. Column 5 is the difference between Column 3 and 4. It represents the estimated number of retarded children included among those entered in the school report as "of normal age for the grade."

TABLE 12  
NUMBER OF PREVIOUS FAILURES OF CHILDREN IN EACH GRADE WHO FAILED, IN THE TEN SCHOOLS STUDIED, IN JUNE, 1915

Grade	Number of Previous Failures						Total	Not Given	Grand Total
	None	1	2	3	4	5			
1st.....	53	109	11	1	....	....	174	5	179
2nd.....	11	43	24	4	....	1	83	11	94
3rd.....	9	43	34	4	1	1	92	1	93
4th.....	3	20	19	8	4	2	56	2	58
5th.....	6	20	18	14	10	....	68	....	68
6th.....	4	20	26	18	3	....	71	3	74
7th.....	3	21	32	3	....	....	59	5	64
8th.....	3	16	6	....	....	....	25	1	26
Totals.....	92	292	170	52	18	4	628	28	656
Percentages.....	14.6	46.5	27.1	8.3	2.9	.6	100	....	....

TABLE 13

AGE AT STARTING SCHOOL, OF CHILDREN IN EACH GRADE WHO FAILED,  
IN THE TEN SCHOOLS STUDIED, IN JUNE, 1915

Grades	Age at Starting School						Total	Not Given	Grand Total
	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs. & over			
1st.....	5	128	33	6	1	....	173	6	179
2nd.....	4	65	19	1	1	1	91	3	94
3rd.....	1	70	21	1	....	....	93	....	93
4th.....	3	36	13	1	....	1	54	4	58
5th.....	2	46	16	3	....	....	67	1	68
6th.....	....	43	24	5	1	....	73	1	74
7th.....	3	51	8	1	....	....	63	1	64
8th.....	....	20	4	2	....	....	26	....	26
Totals.....	18	459	138	20	3	2	640	16	656
Percentages.....	2.8	71.8	21.6	3.1	.4	.3	100.0	....	....

TABLE 14

SERIOUS ILLNESS REPORTED FOR THE YEAR 1914-1915, FOR THE CHILDREN  
WHO FAILED IN THE TEN SCHOOLS STUDIED

Children with Illnesses during 1914-15	
Yes.....	230—47%
No.....	259—53%
Total.....	489
Omitted.....	167
	656

TABLE 15

DETAIL OF ILLNESSES DURING 1914-15 OF 230 WHO WERE SICK

Type of Disease	Number of Cases	Number per 1,000 from whom illness data was secured
Digestive system.....	23	47
Nutritional disorders.....	4	8
Infectious—serious.....	31	63
Infectious—children's diseases.....	78	159
Eye, ear, nose and throat.....	69	141
Lung.....	11	22
Heart.....	3	6
Blood.....	4	8
Urogenital.....	6	12
Nervous system.....	10	20
Miscellaneous.....	39	80
Total.....	278	566



TABLE 16  
INCOMES OF FAMILIES OF CHILDREN WHO FAILED IN TEN SCHOOLS,  
CLASSIFIED ACCORDING TO SIZES OF FAMILIES

Weekly Family Incomes	Size of Family													Age Classification of Members of Families		
	1	2	3	4	5	6	7	8	9	10	11	12	13	All Sizes	Adults	Minors
\$ 1— 4.99	..	3	..	5	..	..	..	2	..	..	..	..	..	10	13	29
5— 6.99	..	1	4	4	5	2	3	..	..	..	..	..	..	19	37	51
7— 8.99	..	3	3	9	7	8	2	2	..	1	..	..	..	35	64	110
9—10.99	..	1	8	7	9	8	7	1	2	..	2	..	..	45	92	152
11—12.99	..	6	14	18	21	7	6	6	..	..	..	..	..	78	159	276
13—14.99	..	..	7	21	22	21	11	4	..	2	1	..	..	89	198	283
15—17.99	..	..	5	22	15	18	8	4	5	4	2	..	1	84	207	287
18—20.99	..	..	3	13	9	9	5	4	5	2	1	..	1	52	124	192
21—24.99	..	..	8	10	12	5	6	3	4	1	..	..	..	49	124	142
25—29.99	..	..	..	1	1	2	3	1	..	..	..	..	..	8	25	25
30—39.99	..	..	..	1	..	3	2	1	..	..	..	..	..	7	22	22
Total.....	0	14	52	111	101	83	53	28	16	10	6	0	2	476*	1065	1569
Median Income.....		\$ 9	\$12	\$14	\$13	\$14	\$14	\$14	\$18	\$16	\$15			\$14.15		
		55	25	25	82	60	65	50	60	50	00					
Per Cap. Income.....		\$ 4	\$ 4	\$ 3	\$ 2	\$ 2	\$ 2	\$ 1	\$ 2	\$ 1	\$ 1			\$ 2.66		
		50	18	56	76	43	09	81	06	65	36					

\* Data for 180 children omitted.

\* Data for 180 children omitted.

TABLE 17  
NUMBER OF WAGE EARNERS IN FAMILIES OF CHILDREN WHO FAILED

Number of Wage Earners	Number of Families Having Each Specified Number of Wage Earners	Total Number of Wage Earners
0	7	0
1	385	385
2	152	304
3	61	183
4	17	68
5	8	40
6	2	12
All Families 1.56	632	992
Data Omitted	24	.....
Grand Total	656	.....

TABLE 18  
WEEKLY WAGES OF PARENTS OF CHILDREN WHO FAILED

Wage Groupings	Number of Fathers in Each Specified Group	Number of Mothers in Each Specified Group
Under \$4.....	....	18
\$ 4— 5.....	....	35
6— 8.....	15	31
9—10.....	41	3
11—12.....	88	....
13—14.....	36	2
15—16.....	72	1
17—18.....	46	1
19—20.....	28	1
21—24.....	24	....
25 and over.....	9	....
Total for whom wages are stated	359	92
Omitted of those working.....	177	50
Total working.....	536	142

TABLE 19  
MONTHLY RENTALS PAID BY FAMILIES OF CHILDREN WHO FAILED

Monthly Rentals	Number of Families Paying Specified Rentals
\$ 3— 4.99.....	12
5— 6.99.....	87
7— 9.99.....	170
10—11.99.....	89
12—14.99.....	91
15—17.99.....	31
18—19.99.....	7
20—22.99.....	18
23—26.99.....	2
27—29.99.....	0
30—34.99.....	5
18.00*.....	1
30—33.00*.....	2
35.00*.....	3
50.00*.....	1
Own home.....	77
Data omitted.....	596 60
	656

\* Cases in which rent includes store or where rooms are subrented.

TABLE 20  
NUMBER OF ROOMS OCCUPIED ACCORDING TO NUMBER OF PERSONS IN  
FAMILIES OF CHILDREN WHO FAILED

Number of Persons Per Family	Number of Rooms in Apartment Occupied										Total
	1	2	3	4	5	6	7	8	9	10	
1.....	..	..	..	..	..	..	..	..	..	..	....
2.....	1	8	2	1	1	1	2	..	..	..	16
3.....	1	29	16	6	4	1	1	..	..	..	58
4.....	5	42	51	24	10	2	4	..	..	1	139
5.....	1	35	46	18	13	9	4	..	..	..	126
6.....	..	41	40	19	6	7	2	2	1	1	119
7.....	..	17	24	22	11	4	1	3	..	..	82
8.....	..	7	15	11	5	4	1	1	..	1	45
9.....	..	..	12	5	6	4	..	1	..	1	29
10.....	..	1	5	3	1	3	..	..	..	..	13
11.....	..	3	1	2	2	..	..	..	..	..	8
12.....	..	..	..	..	..	1	..	..	..	..	1
13.....	..	..	..	1	..	1	..	..	..	..	2
Total.....	8	183	212	112	59	37	15	7	1	4	638

TABLE 21  
CONTACTS WITH SOCIAL AGENCIES REPORTING TO CONFIDENTIAL EX-  
CHANGE OF FAMILIES OF CHILDREN WHO FAILED

Agency	Number of Times Reported Sept. 1914—Sept. 1915
Associated Charities.....	49
United Jewish Charities.....	4
Catholic Charities.....	3
Salvation Army.....	43
Attendance Dept. Bd. of E.....	53
Juvenile Court.....	36
School Nurses.....	63
Child Welfare.....	191
Total No. Times Reported.....	442
Total No. Cases Reported.....	229

TABLE 22  
EMPLOYMENT OF CHILDREN WHO FAILED

Types of Occupation	Number of Children
Store.....	4
Moving Picture Theatre.....	1
Carpenter Work.....	1
Stable.....	1
Light Lamps.....	1
Newspapers.....	36
On Wagon.....	2
Errands.....	8
Help Father.....	2
Home.....	39
Occupation Omitted.....	95
	8
Children Working.....	103
Not Working.....	512
Data Omitted.....	41
Total Children.....	656

TABLE 23  
TYPES OF RECREATION MENTIONED BY 481 OF THE CHILDREN  
WHO FAILED

Indoors	Outdoors
Home..... 230	Parks and Playgrounds..... 92
Nursery..... 2	School Yard..... 9
Church Clubs and Parties..... 8	Streets..... 55
Movies..... 33	Skates..... 4
Music..... 13	Bicycle..... 2
Sewing..... 6	Swimming..... 5
Reading..... 10	Tennis..... 2
	Ball..... 39
	Athletics and Gymnasium..... 3
	Miscellaneous..... 15
Total..... 310	Total..... 226

175 children gave no information as to recreation.

TABLE 24  
LANGUAGES SPOKEN IN HOMES OF CHILDREN WHO FAILED

	Alone	With English	Total
English.....	....	534	534
German.....	32	37	69
Hungarian.....	3	....	3
Italian.....	19	5	24
Russian.....	1	....	1
Servian.....	1	....	1
Syrian.....	....	2	2
Yiddish.....	5	1	6
Totals.....	61	579	640

TABLE 25  
PARENTAL RELATIONS OF CHILDREN WHO FAILED

	Father	Mother	Total
Separated.....	11	1	12
Dead.....	89	29	118
Step Parents.....	10	8	18
Living with Relative.....	....	....	8
Relationship Normal.....	110	38	156
Data Omitted.....			492 8
Total.....			656

TABLE 26  
TIME SPENT AT HOME BY PARENTS OF CHILDREN WHO FAILED

	Father	Mother
All or Most of the Time.....	37	297
Four or Five Days and Nights.....	....	6
Two Days and Nights.....	....	1
Half of the Day.....	6	10
Noons and Nights.....	3	....
Nights Only.....	305	54
Daytime Only.....	19	....
Week Ends.....	4	....
Irregular and Little.....	37	....
Omitted.....	401 255	368 288
Total.....	656	656

TABLE 27  
CAUSES OF FAILURE IN 1915, AS REPORTED BY

	Parents	Teacher	Total
Mental.....	82—14.6%	225—30.6%	30—18.2%
Physical.....	117—20.9%	101—13.7%	49—29.5%
Immature.....	12— 2.1%	72— 9.8%	10— 6.0%
Disposition and Habits.....		54— 7.3%	
Attitude Toward School.....	83—14.8%	94—12.7%	27—16.3%
Conduct.....	52— 9.3%	13— 1.8%	3— 1.8%
Truancy.....		4— 0.5%	
Absence.....	77—13.7%	88—11.9%	36—21.6%
Change of Schools.....	24— 4.3%	19— 2.6%	5— 3.0%
Late Entrance.....	4— 0.7%	7— 1.0%	1— 0.6%
Difficult Studies.....	29— 5.2%	9— 1.2%	3— 1.8%
Conditions in School.....	52— 9.3%		
Conditions in Home.....	28— 5.0%	51— 6.9%	2— 1.2%
Total.....	560—100.0%	737—100.0%	166 100.0%
Number of Children Involved.....	517	584	166

NOTE: Percentages in this table are based on total number of citations of causes. Percentages in text are based on number of children involved.

TABLE 28  
HEIGHT AND WEIGHT BY AGES  
GIRLS

HEIGHT					WEIGHT				
Age	Number of Children	Average Normal	Average Actual	Average Difference	Ages	Number of Children	Average Normal	Average Actual	Average Difference
		Ft. In.	Ft. In.	In.			Lbs.	Lbs.	
6.5	3	3—9.1	3—10.0	+ .9	6.5	3	43.32	50.50	+ 6.18
7.5	13	3—11.3	3—5.1	—6.2	7.5	13	47.61	46.19	— 1.42
8.5	11	4—1.1	4—0.0	—1.1	8.5	11	52.38	53.52	+ 1.14
9.5	7	4—3.1	4—1.2	—1.9	9.5	7	57.27	56.60	— 0.67
10.5	7	4—4.9	4—2.3	—2.6	10.5	6	62.77	60.95	— 1.82
11.5	5	4—7.3	4—6.0	—1.3	11.5	5	69.34	77.10	+ 7.76
12.5	1	4—9.7	4—10.4	+0.7	12.5	1	78.54	82.00	+ 3.46
13.5	3	5—4.0	4—11.7	—4.3	13.5	3	88.51	83.66	— 4.85
14.5	9	5—2.5	4—11.0	—3.5	14.5	10	98.10	95.01	— 3.09
15.5	8	5—3.0	5—3.3	+0.3	15.5	10	106.48	107.20	+ 0.72
17.5	1	5—3.7	4—9.0	—6.7	17.5	1	115.15	89.00	—26.15
	68	4—6.0	4—4.0	— .2		70	70.20	70.43	+ .23

Norms of Height and Weight are taken from Smedley. Child study in Chicago. Report of U. S. Commissioner of Education, 1, 1098-1099, (1902).

TABLE 29  
HEIGHT AND WEIGHT BY AGES  
BOYS

HEIGHT					WEIGHT				
Age	Number of Children	Average Normal	Average Actual	Average Difference	Ages	Number of Children	Average Normal	Average Actual	Average Difference
		Ft. in.	Ft. In.	In.			Lbs.	Lbs.	
6.5	2	3—9.1	3—6.5	—2.6	6.5	2	45.10	42.70	— 2.30
7.5	13	3—11.4	3—10.2	—1.2	7.5	12	49.39	47.35	— 2.04
8.5	8	4—1.4	4—1.7	+0.3	8.5	7	54.38	55.83	+ 1.45
9.5	7	4—3.5	4—2.5	—1.0	9.5	6	59.47	63.45	+ 3.98
10.5	9	4—5.2	4—5.7	+0.5	10.5	7	65.25	68.10	+ 2.85
11.5	4	4—5.8	4—4.0	—2.8	11.5	4	70.55	67.60	— 2.95
12.5	7	4—8.8	4—4.0	—4.8	12.5	7	76.73	69.00	— 7.74
13.5	3	4—11.6	4—8.0	—3.6	13.5	4	84.61	84.10	— 0.51
14.5	6	5—1.9	5—3.7	+1.8	14.5	6	95.00	105.40	+10.40
15.5	6	5—4.6	5—2.5	—2.1	15.5	6	107.18	107.50	+ 0.13
17.5	0	.....	.....	.....	17.5	0	.....	.....	.....
	65	4—5.8	4—4.5	—1.3		61	69.6	70.0	+ .40

Norms of Height and Weight are taken from Smedley.

## FORM OF CARD USED IN COLLECTING DATA FOR THIS REPORT

Address	Name	Sex	Color	Age	GRADE Act. Gr. Nor. Gr.		School	Birth Place	No.	
Began School	Total Days Absent '14-'15 Terms				Reason—Days		Reason—Days		Remarks:	
Age .....	1	2	3	4	Sick .....	Truancy .....				
No. T. changed .....					Sickness in family .....	Poverty .....				
T. changed '14-'15 .....					Changed School .....	Neglect of Parents .....				
		1st Term		2nd Term		3rd Term		4th Term		Went Backward in
Subjects good in .....										
Subjects poor in .....										
Effort .....										
Conduct .....										
Grades Prev. Repeated	Cause				Child Ambitious?			Other members family set?		
Phys. Devel't Good Fair Poor	Height	Weight	Phys. Defects Yes No	Tonsils	Adenoids	Nose	Eyes	Ears	Heart	Lungs
Teeth	Other		Anemic	Nervous	Illnesses Past Year			Serious Illnesses Since Birth		
Juvenile Protective Association—Retardation Study.										

Parent's or Guardian's Name	Family Unit	Adults	Minors	Housing Good Fair Poor	Rooms No.	Rent per Mo.	Min. Budget	Approx. Income	No. Wage Earners
FATHER—Dead.....Years		MOTHER—Dead.....Years			Language Spoken at Home		Approx. Bed Time Approx. Rising Hour		
Birth Place.....		Birth Place.....			Are Parents Ambitious for Child?				
Length Res. in City .....		Length Res. in City .....			Is Child helped with Night Work?				
Occupation.....		Occupation.....			Is there opportunity for quiet study at home?				
Wages .....		Wages .....							
Time spent at home .....		Time spent at home .....							
Does Child use School Study Hour?		Opportunity for quiet study?			Summer Instruction				
Child Work before or after School Hours?..... Occupation (Character and Details) .....									
Child's Recreation (Character and Amount) .....									
Parents' Opinion of Cause of Failure.....									
Teacher's Opinion of Cause of Failure .....									
Impression of Family.....									
Remarks .....									
..... Investigator. Date.....									

## METHOD OF DETERMINING MENTALITY

By Mrs. Helen T. Woolley

The retarded children tested for the Juvenile Protective Association were all given the form of the Binet Tests, known as the Yerkes Point Scale. This series of tests is recorded in terms of the points obtained out of a possible 100 points. These points can then be translated into mental age by reference to a table showing how many points a child of each age ought to obtain. For each child an intelligence quotient was figured. The intelligence quotient is the ratio of the points obtained, to those which ought to be obtained by an average child of the same chronological age. The usual standard adopted is that an intelligence quotient below 75 means some degree of feeble-mindedness, one from 75 to 89 inclusive, indicates backwardness; one from 90 to 110 inclusive indicates a normal state of development, one from 111 to 125 inclusive indicates a bright child and above 125 a brilliant child.

In addition to the Yerkes Point Scale, supplementary tests were used, which were chosen with reference to the age and mental status of the child. Many of these supplementary tests can also be graded according to the score which the average child of a given age should obtain. Frequently the Supplementary tests are in agreement with the diagnosis indicated by the Yerkes Point Scale, but sometimes they are either much better, or much worse than the Yerkes record and therefore tend to modify the diagnosis. The Yerkes Point Scale is more dependent on linguistic ability than many of the supplementary tests. The final diagnosis takes both series into consideration.

The diagnoses have divided the children into four groups. Those who could be definitely judged feeble-minded have been so classified. The children who might be called either feeble-minded or backward according as one's judgment is influenced by one or another of the phases of the tests, are classified as borderline cases. Those who are above the suspicion of feeble-mindedness, but below average in ability are designated as inferior, while those who are of average ability are called normal. The following abbreviations are used:

Constr. A.	Construction Puzzle A.
Pict. C.	Picture Completion.
Ellis	Ellis Object Memory.
Can.	Cancellation.
Percentile Rank.	Rank on a scale of 100 in comparison with normal children of the same age.
Opp.	Opposites



TABLE 30  
RETARDED CHILDREN TESTED BY THE VOCATIONAL BUREAU

Number of Case	Age in Years and Months	School Grade	Intelligence Quotient	Points on Yerkes	Mental Age	Percentile Rank	NOTES ON SUPPLEMENTARY TESTS	Diagnosis
1	8-6	I	95	39	7-7	...	All below 8 years, standard except Pict. C. 12	Inferior
2	8-10	I	80	39	7-7	...	Sub. very far below 8 years. No others.	Inferior
3	8-11	II	100	50	9-0	...	Average eight year records.	Normal
4	8-11	II	82	41	8-0	...	Opp. below 6 years. Sub. below 8 years. Can. below 8 years.	Inferior
5	9-5	I	57	31	6-5	...	All below 8 years except Construction Puzzle A. 8 years.	Defective
6	9-5	II	92	50	9-0	...	Substitution far below 8 years. Ellis Object M. far below 8 years.	Inferior
7	9-6	II	91	50	9-0	...	Picture Completion 12	...
8	9-6	II	94	51	9-3	...	Two tests below 6 years. Substitution below 8 years.	Inferior
9	9-6	II	76	42	8-2	...	All below 8 years.	Inferior
10	9-6	II	67	37	7-4	...	Opp. below 6 years. Sub. 8 years. Pict. C. below 8 years.	Borderline
11	9-6	II	81	44	8-4	...	Sub. Construction A. and Pict. C. far below eight years.	Defective
12	9-7	II	80	45	8-5	...	Sub. below 8 years. Pict. C. 8 years. Constr. Puzzle A. 12 years.	Borderline
13	9-8	I	62	35	7-0	...	Sub. below 8 years. Pict. C. 11 years. Ellis Object Memory 10 years.	Inferior
14	9-9	I	51	29	6-2	...	All below 8 years.	Borderline
15	10-2	II	64	38	7-6	...	All below 8 years.	Defective
16	10-3	III	82	49	8-11	...	Opp. 8 years. Substitution above 8 years.	Inferior
17	10-5	III	90	55	9-7	...	Substitution 8 years. Picture Completion 9 years.	Normal
18	10-6	II	50	30	6-4	...	All below 8 years.	Defective
19	10-6	II	80	49	8-11	...	Substitution 8 years. Picture Completion 11 years.	Inferior
20	10-8	III	114	72	12-6	...	Substitution 10 years. Other tests 9 years.	Normal
21	10-8	III	90	56	9-9	...	Opp. below 8 years. Sub. 8 years. Pict. C. above 12 years.	Defective
22	10-8	III	83	52	9-3	...	Opp., Canc. and Sub. all below 8 years.	Inferior
23	10-8	III	81	51	9-2	...	Opp. below 6 years. Other tests above 8 years.	Borderline
24	10-9	V	108	68	11-8	...	Substitution and Picture Completion 12 years.	Inferior
25	10-10	II	a 94 b 70	a 59 b 70	a 10-2 b 8-6	...	a Sub. below 8 years. Ellis and Pict. C. normal. b At age 12-4 Stanford Revision. Age 8-6.	Normal
26	11-1	III	99	63	10-8	...	Opp. below 6 years. Substitution 12 years.	Borderline
27	11-9	III	71	49	8-11	...	Opp. 6 years. Substitution below eight years.	Inferior
						...		high grade moron

TABLE 30—Continued  
RETARDED CHILDREN TESTED BY THE VOCATIONAL BUREAU

Number of Case	Age in Years and Months	School Grade	Intelligence Quotient	Points on Yerkes	Mental Age	Percentile Rank	NOTES ON SUPPLEMENTARY TESTS	Diagnosis
28	12-0	III	70	49	8-11	...	Opp. 6 years. Sub. and Pict. C. 12 years. Canc. 8 years.	Borderline
29	12-0	III	91	64	11-0	...	Opp. below 8 years. Pict. C. 12 and Sub. 9 years.	Inferior
30	12-3	IV	83	59	10-2	...	Opp. 8 years. Sub. 8 years. Pict. C. 12 years. Constr. A. 8 years.	Inferior
31	12-4	IV	111	79	14-0	...	Opp. 8 years. Substitution 10 years.	Normal
32	12-4	IV	106	75	13-3	...	Opp. 8 years. Sub. 9 years. Canc. 8 years. Pict. C. 12 years.	Borderline
33	12-6	IV	76	55	9-6	...	Opp. 8 years. Sub. below 8 years. Pict. C. 12 years.	Defective
34	12-9	IV	66	48	8-10	...	Opp. below 8 years. Sub. 11 years. Constr. P. A. 8 years. Pict. C. 11 years.	Defective
35	13-3	IV	77	58	10-0	...	All far below 8 years. Speech defect.	Defective
36	13-3	V	a87	b65	a11-2	...	a Opp. 8 years. Sub. 11 years. Construction Puzzle A. 13 years.	Defective
37	13-4	V	b64	b9-7	b9-7	...	b Stanford Revision at 15 years—9-7. Intelligence Quotient: 64	Defective
38	13-6	V	70	53	9-5	...	Opposites 8 years. Substitution 12 years, (second trial)	Defective
39	13-6	III	86	66	11-4	...	Substitution normal. Picture C. normal.	Inferior
40	13-7	IV	74	57	9-11	20	Opposites 6 years. Substitution 8 years.	Borderline
41	13-11	V	75	58	10-0	...	Opposites 8 years. Substitution 8 years. Cancellation 8	Borderline
42	14-0	V	86	68	11-8	10	Opposites 12 years. Substitution 10 years. Picture Completion 12	Inferior
43	14-0	VII	82	65	11-2	9	Opposites 8 years. Substitution 12 years.	Inferior
44	14-0	V	80	63	10-10	20	Opposites 8 years. Substitution 8 years. Cancellation 12	Normal
45	14-0	V	79	60	12-0	60	Opposites 6 years. Substitution 8 years. Picture Completion 12	Inferior
46	14-2	VI	86	68	11-8	...	Substitution pages 1-2 12 years. Page 4, 8 years.	Inferior
47	14-3	V	81	69	11-0	...	Substitution 10 years. Picture C. 12 years. Constr. P. A. 12	Inferior
48	14-3	III	77	62	10-8	...	All below 8 years.	Defective
49	14-6	VI	95	76	13-6	40	Opposites 8 years. Substitution pages 1-3 12 years. Page 4, 8 years. Pict. C. 8 years.	Inferior
50	14-6	VI	69	55	9-7	10	Substitution and Cancellation 12 years.	Defective
51	14-7	VI	86	69	11-10	38	Opposites 8 years. Sub. 10 years. Const. A. 7 years. Ellis 9 years. Canc. 8 years.	Inferior
52	14-7	V	69	55	9-7	20	Opp. 8 years. Sub. pages 1-3, 10; page 4, 8 years; Canc. 8 years.	Defective
53	14-7	V	79	63	10-10	10	Opposites 6 years. Sub. 9 years. Const. A. 8 years. Canc. 8 years.	Borderline
54	14-8	V	98	79	14-0	75	Only failure. Substitution page 4	Normal

TABLE 30—*Concluded*  
RETARDED CHILDREN TESTED BY THE VOCATIONAL BUREAU

NOTES ON SUPPLEMENTARY TESTS						Diagnosis
Number of Case	Age in Years and Months	School Grade	Intelligence Quotient	Points on Yerkes	Mental Age	
					Percentile Rank	
55	14-9	III	60	49	8-11	Defective
56	14-9	V	73	51	9-2	Defective
57	14-10	V	68	53	10-10	Borderline
58	14-10	V	54	44	8-4	Defective
59	14-11	VI	93	75	13-2	Normal
60	14-11	IV	74	60	10-4	Defective
61	15-1	V	75	61	10	Defective
62	15-2	VI	63	52	9-3	Defective
63	15-3	VI	84	69	11-10	Inferior
64	15-3	VI	67	55	9-7	Defective
65	15-4	VI	93	76	13-6	Normal
66	15-5	VI	94	77	13-6	Normal
67	15-6	V	76	63	10-10	Borderline
68	15-7	VI	78	65	11-2	Inferior
69	15-8	VI	102	85	16-6	Normal
70	15-9	VI	70	58	10-0	Borderline
71	15-10	V	87	73	12-9	Inferior
72	16-3	VII	79	67	11-6	Inferior
73	17-7	VIII	77	67	11-6	Inferior
74	11-10	IV	80	57	9-9	Inferior
75	12-5	III	71	51	9-1	Defective
76	13-3	IV	89	68	11-7	Inferior
77	15-10	VI	99	83	15-7	Inferior
78	11-11	III	63	44	8-3	High-grade Defect.
79	11-0	III	77	49	8-9	Inferior

Abbreviations Used: Opp. Association by Opposites. Sub. Substitution—Woolley Form.

## MENTAL AND CHRONOLOGICAL AGES OF CHILDREN EXAMINED

# MENTAL AGES

CHRONOLOGICAL AGES

	6 <sup>0.5</sup>	6 <sup>6.11</sup>	7 <sup>0.5</sup>	7 <sup>6.11</sup>	8 <sup>0.5</sup>	8 <sup>6.11</sup>	9 <sup>0.5</sup>	9 <sup>6.11</sup>	10 <sup>0.5</sup>	10 <sup>6.11</sup>	11 <sup>0.5</sup>	11 <sup>6.11</sup>	12 <sup>0.5</sup>	12 <sup>6.11</sup>	13 <sup>0.5</sup>	13 <sup>6.11</sup>	14 <sup>0.5</sup>	15 <sup>0.5</sup>	16 <sup>0.5</sup>	Totals	
8 <sup>6.11</sup>				2	1		1														4
9 <sup>0.5</sup>	1						1														2
9 <sup>6.11</sup>	1		2		3		2														8
10 <sup>0.5</sup>				1		1		1													3
10 <sup>6.11</sup>	1					1	2	1	1			1		1							8
11 <sup>0.5</sup>						1				1											2
11 <sup>6.11</sup>					1	1		1													3
12 <sup>0.5</sup>						1	1		1		1					1		1			6
12 <sup>6.11</sup>						1		1													2
13 <sup>0.5</sup>							1		1		1	1									4
13 <sup>6.11</sup>								1	1		1	1									4
14 <sup>0.5</sup>										2	2	1	2								7
14 <sup>6.11</sup>					1	1	1	2	1	2		1			1	1	1				12
15 <sup>0.5</sup>							1	1		1		1				2					6
15 <sup>6.11</sup>									1	1	1			1				1		1	6
16 <sup>0.5</sup>												1									1
16 <sup>6.11</sup>												1									1
	3	0	2	3	6	7	10	8	6	7	6	8	2	2	2	3	2	1		1	79

More than one year above age—3 cases

Within one year of age—17 cases.

More than one year below age—59 cases.

More than two years below age—39 cases.



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